Worksheet 5 Defining and updating tables using SQL Answers

1. The table below shows common data types:

Data type	Description	Example
CHAR(n)	Character string of fixed length n	ProductCode CHAR(6)
VARCHAR(n)	Character string variable length, max. n	Surname VARCHAR(25)
BOOLEAN	TRUE or FALSE	ReviewComplete BOOLEAN
INTEGER, INT	Integer	Quantity INTEGER
FLOAT	Number with a floating decimal point	Length FLOAT (10,2) (maximum number of digits is 10 and maximum number after decimal point is 2)
DATE	Stores Day, Month, Year values	HireDate DATE
TIME	Stores Hour, Minute, Second values	RaceTime TIME
CURRENCY	Formats numbers in the currency used in your region	EntryFee CURRENCY

(a) Write an SQL statement to create a table for a table called Member, which has the following fields:

MemberID	4 characters (Primary key, compulsory field)
Firstname	max 12 characters (compulsory field)
Surname	max 20 characters (compulsory field)
DateJoined	Date dd/mm/yy (compulsory field)
SubPaid	Yes/No (optional field)

```
CREATE TABLE Member
(
MemberID        CHAR(4) NOT NULL, PRIMARY KEY
Firstname       VARCHAR(12) NOT NULL,
Surname         VARCHAR(20) NOT NULL,
DateJoined      DATE NOT NULL
SubPaid         BOOLEAN
)
```

(b) Write an SQL statement to amend the table to add a new column for Category, a Boolean data type

```
ALTER TABLE Member
ADD Category BOOLEAN
```

(c) Write an SQL statement to delete the column SubPaid

```
ALTER TABLE Member
```

DROP SubPaid

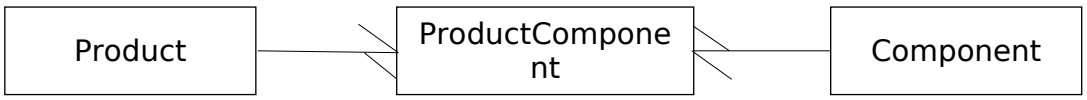
(d) Write an SQL statement to change the maximum length of the Firstname field to 15 characters

ALTER TABLE Member

MODIFY COLUMN Firstname VARCHAR (15) NOT NULL

Task 2

2. Three linked tables are defined as follows:



Product (ProductID, Description, Price)

ProductComponent (*ProductID*, *CompID*, Quantity)

Component (CompID, CompDesc, Cost)

When there are three linked tables, the linking table is defined as follows:

```
CREATE TABLE ProductComponent
(
ProductID       CHAR(4) NOT NULL,
CompID          CHAR(6) NOT NULL,
Quantity        INTEGER
FOREIGN KEY ProductID REFERENCES Product(ProductID)
FOREIGN KEY CompID REFERENCES Component(CompID)
PRIMARY KEY (ProductID, CompID)
)
```

Write the SQL statements to create the table **Component**. CompDesc is to be a maximum of 25 characters, and Cost is a currency field. All fields are compulsory.

```
CREATE TABLE Component
(
CompID          CHAR(6) NOT NULL, PRIMARY KEY,
CompDesc        VARCHAR (25) NOT NULL,
Cost            CURRENCY NOT NULL
```

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)

Task 3

3. (a) Write an SQL statement to insert a new record into the Member table described in Task 1a. The new record is to have the following data values:

MemberID	M046
Firstname	William
Surname	Oldfield
DateJoined	23/06/2016
SubPaid	No

INSERT INTO Member *(can optionally insert all field names)*

VALUES ("M046", "William", "Oldfield", #23/06/2016#, No)

*(could put **False** instead of **No** for the Boolean field)*

(b) Write an SQL statement to update this record, the first name is to be changed to "Bill" and the subscription has now been paid.

UPDATE Member

SET Firstname = "Bill", SubPaid = Yes

WHERE MemberID = "M046"

(c) Write an SQL statement to delete the record for member M025.

DELETE FROM Member

WHERE MemberID = "M025"